

CONTRACT ALLOCATION PROPOSAL 2005-2006 FISCAL YEAR

Division/Office: WPMD/ORE Branch	Concept No.: 2006-D-2
Requestor/Primary Contact: Judith Friedman/Brenda Smyth	Fund (IWMA, Oil, RMDZ, etc.): IWMA
Estimated Contract Amount: \$500,000	
Contractor (Check One): <input type="checkbox"/> State Agency <input type="checkbox"/> Local Agency <input checked="" type="checkbox"/> Private	
Title: Climate Change	
I. INTRODUCTION <p>In June 2005, the Governor signed Executive Order S-03-05 establishing climate change emission reduction targets for the State and creating a multi-agency Climate Action Team (CAT) to meet the directives. The CIWMB is an active member of the CAT and has established target reduction goals for CIWMB, developed work plans, and provided input for the first Climate Action Team Report to the Governor and Legislature. There are three strategies that will be employed by the Board to achieve our targeted greenhouse gas (GHG) reduction goals. They are: increasing recovery of recyclables, implementing waste diversion programs to move towards zero waste, and improving landfill gas (methane) recovery. There are some critical tasks that need to be funded and implemented in order to ensure successful outcomes for the three GHG reduction strategies as described below. Total funding being requested from the IWMA is \$500,000. This Allocation Proposal supports the CIWMB's Green Procurement Action Plan (GPAP) and the Technology Assessment Action Plan.</p>	
II. SPECIFIC GOALS AND HOW ACCOMPLISHMENT WILL BE MEASURED <p>The specific goals of the contract are to complete a lifecycle assessment for organics diversion and to complete an economic analysis of the costs and benefits of implementing all of the GHG reduction strategies and their impacts on the economy of California. The success of the project will be measured by the completion of these analyses and their ability to answer the questions of the climate change project.</p>	
III. JUSTIFICATION FOR PERSONAL SERVICES [GC 19130 b] <p>This contract is needed because the CIWMB staff does not possess the knowledge or experience to perform the tasks outlined in the Scope of Work. This contract requires specific solid waste modeling, data collection expertise, and marketing and economic impact assessment experience to conduct a lifecycle assessment and economic analysis of the GHG reduction strategies. This allocation proposal will require a Request for Proposal (RFP) process because a very specific expertise is required that is not currently available within civil service.</p>	

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IV. SCOPE OF WORK TO BE PERFORMED

(The text of Section IV through Section VI will form the basis of the RFQ/RFP process.)

A. Lifecycle Assessment

Research and lifecycle assessment of organics diversion must be performed via a contract. Lifecycle assessment of GHG benefits for organics diversion shall provide a complete methodology for assessing carbon sequestration attributes of organics. The lifecycle assessment shall include GHG reduction evaluations for energy savings, reductions in fertilizers, pesticides, herbicides, water usage and renewable fuels for composting and other organics diversion alternatives. Results of lifecycle analysis will be used to prioritize the Board's efforts in implementing diversion strategies that achieve the maximum GHG benefits, both in terms of materials to focus on, and optimal methods of diverting those materials.

B. Economic Analysis

The Governor has requested a refined economic analysis for the costs of implementing all of the GHG reduction strategies to assess their cost effectiveness and impacts on the economy of California and this work must be performed via a contract. While a macro-economic analysis of all of the CAT strategies was completed in the March 2006 CAT report, the Economics Workgroup has requested more in-depth economic information for each of the CIWMB strategies in order to assess their cost effectiveness and impact assessment on the economy of California. Examples of the types of information needed for this analysis are compliance costs of implementation for each strategy; implementation time schedule along with a timeline of capital investments; subsequent impacts on product prices, markets, and the economy; revenue, jobs, and taxes generated; product export status; effects on different industries, counties, and demographics; potential growth in product sales, jobs, and technology; economies or diseconomies of scale; GHG emission reductions that result from implementation of each strategy; associated impacts on energy, electricity, petroleum, water, and other air pollutants such as SO_x, NO_x, PM₁₀, VOCs; probabilities of success; and support for long-term economic valuation of various worst-case scenarios of global warming.

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V. TASKS IDENTIFIED

I. Lifecycle Assessment

Task I-1: Detailed Workplan

The initial workplan shall include, but not be limited to the following:

- a) Methodology
- b) Delineation of System Boundaries
- c) Impacts to Be Analyzed
- d) Data Collection
- e) Description of Variations in System Parameters
- f) Task List, Deliverables, and Timeline

The Contractor shall revise the initial workplan submitted as part of its proposal, based on comments from the Board Contract Manager. The Contractor will, as part of the workplan, refine analytical model(s) or modeling techniques based on review and input from the Board Contract Manager.

Task I-2: Lifecycle Inventory and Data Collection

Upon approval of Task I-1 by the Board Contract Manager, the Contractor shall compile a lifecycle inventory (Inventory) that quantifies energy requirements, environmental impacts, and public health impacts. The results of the inventory shall be segregated by organics processing options (e.g., composting, thermal-chemical conversion, bio-chemical conversion), by media (air, water, land), and any other category the Contractor deems necessary to fulfill the goal of this project.

Data collected for each unit process shall be reported in common units of measurement to allow for the comparison of emissions from each unit process. The Contractor shall also gather cost benefit information such as production costs, product market values etc. for the approved scenarios for purposes of completing the Economic Analysis portion of the Contract.

Task I-3: Lifecycle Impact Assessment

Upon completion of the Inventory described in Task I-2, the Contractor shall conduct a Lifecycle Impact Assessment (Assessment) that includes, but is not limited to, the following impact categories:

- a) air emissions;
- b) water discharges;
- c) land use implications;
- d) carbon sequestration; and
- e) energy requirements and production (e.g., energy balance).

Upon completion of the assessment, the Contractor shall document the results of the assessment, including descriptions of methodology, systems and boundaries analyzed, and assumptions made in performing the assessment. This documentation shall be included Final Report required in Task I-5.

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Task I-4: Interpretation of Lifecycle Analysis

The Contractor shall interpret (i.e., identify, quantify, check, and evaluate information from) the results of the Inventory and Assessment. At a minimum, this Lifecycle Interpretation (Interpretation) step shall identify significant issues and evaluate the completeness, sensitivity, and consistency of the data and results. This Interpretation shall be included in the Final Report pursuant to Task I-5.

Task I-5: Lifecycle Assessment Final Report

The Contractor shall prepare a Final Report for the Lifecycle Assessment portion of this contract. The Final Report shall document all aspects of the Lifecycle Assessment and shall include, at a minimum, descriptions of the Detailed Workplan, the Inventory, data tables, the Assessment, and the Interpretation.

II. Economic Analysis

Task II-1: Detailed Workplan

The workplan should include but not be limited to the following areas:

- a) Analytical Methodology
- b) Application of Methodology to Three CIWMB GHG Reduction Strategies
- c) Final Delineation of Economic Impacts
- d) Task List, Deliverables, and Timeline

The Contractor shall revise the workplan and analytical techniques based on comments from the Board Contract Manager. The revised workplan will reflect the agreed upon analytical methodology for assessing the cost benefit impacts of the GHG reduction strategies on the economy of the State of California.

Task II-2: Determine Economic Impacts

The Contractor shall assess cost benefit data and the economic impacts of implementing the three GHG reduction strategies on the State of California. Cost benefit data and economic impacts are defined as (but not limited to) compliance costs of implementation for each strategy; implementation time schedule along with a timeline of capital investments; subsequent impacts on product prices, markets, and the economy; revenue, jobs, and taxes generated; product export status; effects on different industries, counties, and demographics; potential growth in product sales, jobs, and technology; economies or diseconomies of scale; GHG emission reductions that result from implementation of each strategy; associated economic impacts on energy, electricity, petroleum, water, and other air pollutants such as SO_x, NO_x, PM₁₀, VOCs; probabilities of success; and support for long-term economic valuation of various worst-case scenarios of global warming.

The Contractor shall conduct this economic impact assessment according to the workplan described in Task II-1. Economic impact assessment results shall be reported in a format that is consistent with the requirements of the climate change project as defined by the Economics Studies Section of the Air Resource Board. Economic impact assessment results shall address, at a minimum, GHG strategy cost effectiveness, macroeconomic impact assessment of implementing the strategies, the export market potential for the California economy for developing GHG

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reduction technologies, economic assessment for market-based solutions, and the economic valuation of long-term GHG reductions.

Task II-3: Economic Analysis Final Report

The Contractor shall prepare a Final Report that documents all aspects of the Economic Analysis portion of this contract.

VI. CONTRACT/TASK TIME FRAME

There is an immediate need to provide this critical research in lifecycle assessment and economic analysis in support of the GHG reduction strategies required of the CIWMB for the climate change project. The Governor has set target dates for achieving climate change emission reduction goals and GHG reduction strategy workplans have already been prepared. There are essential deadlines that must be met in order to comply with the Governor's schedule and required reports. The services for this contract should begin as soon as possible following funding approval and the estimated length of time to complete the contract work is two years. If this work is not approved and the timeframe is not met, then CIWMB would not be able to do a complete analysis for the GHG reduction strategies of the Governor's climate change project.

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Division/Office: WP&MD	Concept No.: 2006-D-3
Requestor/Primary Contact: Ronald Lew	Fund (IWMA, Oil, RMDZ, etc.): IWMA
Estimated Contract Amount: \$150,000	
Contractor (Check One): <input checked="" type="checkbox"/> State Agency <input type="checkbox"/> Local Agency <input type="checkbox"/> Private	
Title: Agricultural Compost Specifications	

I. INTRODUCTION

This Allocation Proposal requests \$150,000 for development of agricultural compost specifications that would be developed under contract by University of California at Riverside and the Association of Compost Producers (ACP). The benefits of compost use in traditional agricultural production settings such as vegetable row crops and orchards are well established and documented. Numerous studies funded by the Integrated Waste Management Board support using compost as a valuable soil amendment to revitalize nutrient poor soils, build soil organic matter, increase water retention and help produce larger, healthier crops.

For decades there have been calls for detailed compost specifications, and announcements of plans to develop them (by several European countries and at Cornell, in particular). Yet very few compost specifications have emerged that go beyond the basic regulatory issues. Many states are waiting for the federal government to develop specifications; some are looking at California, Washington State and Ohio to take the lead.

Some of the major issues/barriers to effective specifications that the CIWMB has identified through previous work include 1) the tendency to bog down in discussion of regulatory standards, 2) the tendency to produce generic compost primarily for the purpose of recycling waste material, rather than tailoring production to specific uses and customers, 3) the tendency for research laboratories to focus on how compost performs rather than the physical-chemical characteristics of that compost, 4) historically limited quality control in the field (the users not always having affordable and portable instrumentation to verify product quality), 5) disagreement about what to include or exclude in a specification, especially for marketing purposes, and finally 6) underlying basic differences among various professional disciplines about "what is good compost".

A scoping workshop was convened in late April by CIWMB staff to discuss some of the above issues and solicit ideas for this project from the agricultural community. Participants in the workshop included farm advisors, Farm Bureaus directors, grower associations, cooperative extension specialists as well as representatives from the compost industry. A mock-up of the new specifications was presented and ideas were solicited as to what was needed in the specifications and a corresponding use index to help growers incorporate compost in their growing operations. One of the major points that came out of the workshop was that these tools are needed to avoid bad experiences with compost which in the past have led to crop damage and a negative perception of compost due to mismatched product selection.

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This Allocation Proposal is to develop a comprehensive set of specifications including elements that would be more useful to the end user (i.e. in this case, agricultural growers). These specifications will be primarily targeted towards the agricultural community (i.e. vegetable/fruit growers) and the initial set of specifications will be developed for approximately 5 representative crops. Crops that are being considered would meet the dual criteria of being both high margin and having the ability to incorporate large amounts of compost in their growing regimes. Tentative crops being considered include grapes, avocados, cotton, tomatoes as well as some horticultural/nursery products. Final selection of crops to include will be among one of the first tasks in the Scope of Work (SOW) as contained in the contract.

II. SPECIFIC GOALS AND HOW ACCOMPLISHMENT WILL BE MEASURED

The goals of this Allocation Proposal are threefold; 1) to develop a comprehensive set of compost specifications for the agricultural sector that go beyond the traditional physical-chemical parameters that currently exist in a patchwork manner throughout different states; 2) to incorporate the newly developed specifications into the existing Association of Compost Producers (ACP) Compost Index that is currently being developed under separate Waste Board contract; and 3) to outreach the newly developed specifications to the agricultural community. By incorporating these new specifications into the ACP Compost Index, growers will be more easily able to reference which compost to use for their given crop and the best place to procure it. This combination of new specifications working in tandem with the ACP Compost index will obviate many of the problems that the current set of compost specifications creates (i.e. incomplete, overly general information that is not helpful to many growers). These new specifications should lay the foundations for developing other specifications for other end-users (i.e. horticultural, turf, silviculture, etc.) that will become a model for other states to follow.

This project would assist in meeting the CIWMB's Green Procurement Action Plan (GPAP) targets for compost use in agriculture by providing enhanced purchasing information to potential end-users (agricultural growers) through the ACP Compost Index while simultaneously providing a powerful marketing tool to producers. Links to the newly developed compost specifications and ACP Compost Use Index would go into the GPAP toolbox for further marketing and promotion to the targeted audiences.

The heart of the new compost specifications are a set of elements that are lacking in existing specifications. Specifically, most compost specifications to date include only general information on the physical-chemical characteristics of compost. The new specifications in this project would include much more comprehensive data that would better enable a grower to make correct choices among the myriad of compost products available in the market.

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Some of the elements that are being proposed in this project include:

- 1) Grade or category designation, 2) Appropriate end-uses and limitations, 3) Feedstock ingredients, 4) Process description, including cure times, 5) Contamination limits, including regulatory standards, 6) Physical-chemical characteristics, e.g. pH, 7) Performance characteristics, i.e. benefits, 8) Adjusting for local conditions (soil, etc.), 9) References (Literature, web sites, etc.), 10) Vendor notes (delivery, spreading, etc.)

Most importantly, these new elements would be incorporated into the ACP Compost Use Index that would provide a simple, intuitive framework for making decisions by growers on which compost to purchase and how to effectively use and manage that product.

III. JUSTIFICATION FOR PERSONAL SERVICES [GC 19130 b]

Staff does not possess the necessary research skills or facilities to conduct rigorous scientific research and testing needed to promulgate expanded compost specifications. The research staff of UC Riverside and the Association of Compost Producers do possess the requisite knowledge and experience to develop scientific methodologies, testing and development of specifications and a use index that is the desired outcome of this project.

IV. SCOPE OF WORK TO BE PERFORMED

The goal of this project is to develop a comprehensive set of compost specifications and corresponding use index as described above. To that end, the primary contractor, UC Riverside, will conduct scientific research through a combination of literature and scientific paper review and experiments designed to generate the data for the above ten elements being proposed for each crop type selected. The contractor will research existing data on compost specifications, develop scientific methodologies and testing protocols to test those methodologies, use the data generated from the testing to develop fully the ten elements that will comprise the specifications and draft a final set of comprehensive set of specifications. UC Riverside and the subcontractor, ACP, will then incorporate the new specifications into the existing Compost Use Index framework which will provide a reference tool for growers when selecting the appropriate compost for a given production scenario. Workshops with the agricultural community will then be conducted to present the new specifications and compost use index to growers in a variety of hands-on teaching forums.

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V. TASKS IDENTIFIED

Task 1: Inventory current compost specifications nationwide and compile and analyze information for data gaps. Conduct needs analysis that identifies data gaps and maps out how new information generated by the proposed research will supplement or replace existing data.

Task 2: Design research methodology that will generate data for the ten elements of the new specifications. Identify reference crops and use the designated methodology to conduct experiments that will generate information on each element for a given reference crop.

Task 3: Compile and analyze data from Task 2 and draft specifications.

Task 4: Incorporate new specifications into the ACP Use index and that will be used as a reference tool for growers.

Task 5: Beta test ACP index containing specification information with reference group of growers for a specified time frame.

Task 6: Refine and update index to incorporate test findings.

Task 7: Publish ACP index and compost specifications via Web links in the GPAP toolbox.

Task 8: Conduct workshops with the agricultural community.

VI. CONTRACT/TASK TIME FRAME

The project can begin anytime after the proposal has been formally approved by the Board. Depending on the timing of funds release and contract negotiation between the parties, the first planning phases of the project can commence during the Winter of 2006. The contract is expected to run 2 years from date of execution.

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Division/Office: WPMD/ORE	Concept No.: 2006-D-4
Requestor/Primary Contact: Berton/Levenson	Fund (IWMA, Oil, RMDZ, etc.): IWMA
Estimated Contract Amount: \$50,000	
Contractor (Check One): <input checked="" type="checkbox"/> State Agency <input type="checkbox"/> Local Agency <input type="checkbox"/> Private	
Title: Solid Waste to Biofuels Forum	

I. INTRODUCTION

Recent solid waste characterization studies funded by the Board indicate that approximately 70-80 percent of the material being landfilled is organic in nature which could be converted to biofuels. If the entire organic fraction of material currently being landfilled were converted to biofuels, it would have the energy equivalence of 60 million barrels of crude oil annually. On April 25, 2006, the Governor signed Executive Order S-06-06, establishing a goal of 20 percent biofuels production by 2010, 40 percent by 2020, and 75 percent by 2050. The feedstock for biofuels production would be biomass resources in California, including solid waste.

This concept is for a Solid Waste to Biofuels Forum. This would support the Board's Technology Assessment Action Plan, the interagency Bioenergy Working Group, and the Climate Action Team (beyond 50% strategy). The forum would be held in conjunction with other agencies and institutions focusing on the feasibility of producing biofuels from solid waste, with an emphasis on identifying key research, testing, and pilot project opportunities. For example, certain technologies, such as enzymatic hydrolysis, that might be able to produce biofuels from the cellulosic portion of solid waste appear to require more basic lab-scale research on technical process issues, as well as economic analysis. However, it is not clear exactly how such research should be focused, and whether certain hydrolytic processes may be further along in testing and development than others. To assure that this workshop represents the latest thinking in this area, staff suggests that the Board work cooperatively with the California Energy Commission and UC Davis and UC Riverside, all of which have ongoing work in this area, to prepare technical information for the forum and provide for participation from around the country.

The University of California Davis' California Biomass Collaborative mission is to provide a comprehensive statewide collaborative program in scientific research and innovation, technology development, demonstration, and deployment, and education and training. This concept is for an interagency agreement with the California Biomass Collaborative to provide technical analysis and logistical support for the Solid Waste to Biofuels Forum. The Biofuels Forum will have speakers from academia, research institutes, and companies involved in basic and advanced research on biofuel production technologies from solid waste and biomass.

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II. SPECIFIC GOALS AND HOW ACCOMPLISHMENT WILL BE MEASURED

The goal of the Forum is to assess the technical and economic feasibility of producing biofuels from solid waste, with an emphasis on identifying key research, testing, and pilot project opportunities. The information from the Forum would be used to develop a research agenda for the CIWMB and possibly the Bioenergy Interagency Working Group. Another goal of the Forum is to provide information that the Board and others can use to develop a statewide strategy for the successful implementation of Executive Order S-06-06.

III. JUSTIFICATION FOR PERSONAL SERVICES [GC 19130 b]

This section does not apply since this proposal calls for an interagency agreement with the University of California.

IV. SCOPE OF WORK TO BE PERFORMED

The contractor will develop the content and structure of the Solid Waste to Biofuels Forum and solicit and coordinate all activities for speakers. The contractor also will develop an overview summary of technical information about the use of solid waste for biofuels, as background for the Forum. The contractor will also be responsible for developing registration and announcements materials for the forum as well as coordinating online and onsite registration. The contractor will also be responsible for developing a forum guide and other materials for attendees.

Upon completion of the forum, the contractor will also be responsible for publishing proceedings, preparing summaries of presentations, ensuring that permission from speakers is obtained for posting of summaries and presentations, and preparing a final report which includes forum evaluations.

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V. TASKS IDENTIFIED

Task 1: Develop content & Forum structure

The Contractor shall be responsible for developing the structure of the Forum, in consultation with the Contract Manager, and for preparing a background summary for the Forum of existing technical information related to the generation of biofuels from solid waste. The Contract Manager shall provide final approval of the content and structure of the forum. As envisioned, the forum shall have the following characteristics:

- Be one to two days in length and be held at the Cal/EPA Building, specific date to be determined;
- Provide a brief background and an overview of the issues facing biofuels production; and
- Include a Question and Answer period at the conclusion of each presentation or panel, time permitting; and
- The Contractor may include and schedule optional programs during the forum, including demonstrations, information tables, and facility tours if deemed appropriate by the Contract Manager.

Task 2: Solicit speakers and coordinate speaker travel/participation

The Contractor shall solicit potential expert speakers, in coordination with the Contract Manager, from business organizations, industry, local governments, Board contacts, and Board mailing lists. The contractor will also be responsible for coordinating travel and lodging, as necessary and within state per diem rate.

The Contractor will request biographies, presentation abstracts and supporting materials for all presentations and coordinate the completion of these items directly with speakers prior to the Forum. The Contractor shall also ensure that copyright permission has been obtained from speakers for posting of abstracts and presentations. The contractor will also be responsible for making sure that any photographs or graphics used by presenters has received the proper permission for use by the presenter.

Task 3: Design and develop announcements and registration materials

In consultation with Board graphics services, the contractor shall develop forum announcement and registration materials.

Task 4: Coordinate Forum logistics

The Contractor shall make all facility arrangements including but not limited to, assessing meeting room needs, developing room set-up, developing signage for identification and direction, arranging meals, and providing for audio/visual requirements. In coordinating these details, the Contractor will continue to work with the proposed facility to assure the facility follows waste management principles that encourage the minimization, reuse and recycling of waste, procurement of recycled content products and development of energy efficient operations.

Task 5: Coordinate Forum registration (online and on-site)

The Contractor will provide online registration and be responsible for onsite registration and process all registrations for the forum, ensuring that all attendees and speakers have provided adequate contact and presentation information for tracking and evaluation. The Contractor will confirm in writing the registration of all attendees.

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Task 6: Develop Forum guide and other materials

In consultation with Board graphic services, the Contractor shall develop a forum guide that includes a forum schedule, session descriptions, attendee's list, and speaker abstracts. The Contract Manager will approve the final version of the guide and any other forum materials before distributing.

Task 7: Publish and distribute Forum proceedings

The Contractor will compile session information, notes and handouts for distribution on-line and in hard copy format. The Contractor is not expected to convert materials into electronic format but should seek to obtain electronic versions of any presentation materials and handouts used during the forum.

Task 8: Final Accounting and Conference Evaluation Report

Using evaluation forms approved by the Contract Manager, the Contractor will compile evaluations of the sessions, speakers, and the overall forum including the registration process, facility, and follow-up by Board staff and Contractor staff. The Contractor will prepare a report of the results of the forum, including the initial background summary, and all issues, concerns, criticisms, and recommendations from attendees.

VI. CONTRACT/TASK TIME FRAME

Upon approval of the Board, an interagency agreement will be developed with the goal of having the Forum in late January or early February 2007. The estimated length of time for contract completion will be no longer than 8 months. If services do not begin in October 2006, it will be difficult to meet the goal of having a forum in late January or early February 2007.

Task 1: Develop content & Forum structure	Oct 2006
Task 2: Solicit speakers and coordinate speaker travel/participation	Nov 2006
Task 3: Design and develop announcements and registration materials	Dec 2006
Task 4: Coordinate Forum logistics	Life of contract
Task 5: Coordinate Forum registration (online and on-site)	Dec 2006
Task 6: Develop Forum guide and other materials	Jan 2007
Task 7: Publish and distribute Forum proceedings	Feb 2007
Task 8: Final Accounting and Conference Evaluation Report	March 2007

CONTRACT ALLOCATION PROPOSAL 2006-2007 FISCAL YEAR

Division/Office: Permitting and Enforcement	Concept No.: 2006-D-5
Requestor/Primary Contact: Walker/Botan	Fund (IWMA, Oil, RMDZ, etc.): IWMA
Estimated Contract Amount: \$75,000	
Contractor (Check One): <input checked="" type="checkbox"/> State Agency <input type="checkbox"/> Local Agency <input type="checkbox"/> Private	
Title: PRODUCTION OF LIQUIFIED NATURAL GAS FROM LANDFILL GAS AND ITS USE IN MUNICIPAL VEHICLES	
I. INTRODUCTION Based on mutual interest to convert landfill gas to Liquefied Natural Gas (LNG), the California Integrated Waste Management Board (CIWMB) and the Bay Area Air Quality Management District (BAAQMD) will conduct a joint effort to evaluate the technical feasibility of generating LNG from landfill gas for use as a transportation fuel. This Allocation Proposal supports the Board's Technology Assessment Action Plan.	
II. SPECIFIC GOALS AND HOW ACCOMPLISHMENT WILL BE MEASURED The goal of this project is to develop a feasibility study on the potential for converting landfill gas to liquified natural gas, using landfills within in the Bay Area Air Quality Management District. The project will be considered successful if the information in the analysis and final report enables the District or any other entity (such as a solid waste management authority, public works department, or private operator) to design a bid package for such a project, solicit proposals, and select a contractor for construction.	
III. JUSTIFICATION FOR PERSONAL SERVICES [GC 19130 b] Civil Service staff does not possess the knowledge or experience to perform the designated tasks. This would entail an exempt standard agreement with a regional regulatory authority.	
IV. SCOPE OF WORK TO BE PERFORMED CIWMB and BAAQMD will conduct a joint effort to evaluate the technical feasibility of generating LNG from landfill gas for use as a transportation fuel. Specifically, this agreement would provide funding for research and analysis of various landfills for the purposes of converting flared methane from landfill gas into LNG, for use as an alternative fuel for vehicles. It will include scoping and design of a landfill gas to LNG facility at the bid package level so that, subsequent to completion of this agreement, a bid for actual plant development could be issued.	

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V. TASKS IDENTIFIED

Task 1: Evaluation of Potential Landfill Sites

The Contractor shall evaluate, using existing data sources, active landfills within the BAAQMD's jurisdiction with respect to current landfill gas production and controls. Analyze and select potential sites where a LNG production facility for converting landfill gas to LNG could optimally be sited. Criteria for site selection can include but are not limited to: volume of landfill gas production; current gas collection and control systems; technical and economic ability to develop pilot plant on-site; potential constraints of contracts or agreements with third-party owners of landfill gas rights; proximity to local end users of LNG for transportation fueling or industrial processes, including fleets of LNG-using vehicles; and availability (real or potential) of transportation services for delivery of LNG to identified end-use markets.

Task 2: LNG Technology Facility Evaluation and Design

The Contractor shall develop a preferred project technology (or technologies) design for applicability to solid waste landfills, including the following:

- a) Describe a preferred LNG production technology (ies) and operating principles. Compare and contrast the relative advantages of using the proposed technology (ies) over other technologies. Include process yields, efficiencies, waste streams, environmental impacts, and costs.
- b) Determine overall system and individual equipment component specifications including size, output, electricity/fuel requirements, etc., and identify performance requirements, fuel specifications and fuel quality standards.
- c) Describe feed gas composition prior to pretreatment, including percentage by weight of methane, CO₂, water, non-methane hydrocarbons, sulfur compounds, nitrogen.
- d) Determine the level of pretreatment needed and the pretreatment strategy/technology that should be selected to remove impurities in collected landfill gas.
- e) Identify all product streams, including waste gases and other byproducts. Describe methods for handling or mitigating waste gases or product streams.
- f) Determine the technical and economic feasibility of the preferred technologies, including status (e.g., new/experimental or fully developed, proven and/or commercially available). Identify and evaluate similar projects that have been implemented.
- g) Provide an assessment of project viability and identify all technical risks associated with the project.
- h) Describe permitting process and develop a plan and schedule of completing permit applications for a landfill gas to LNG facility.

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Task 3: Select Potential Preferred Sites To Build LNG Production Facility

In consultation with the CIWMB Contract Manager, landfill site operators, and local jurisdiction end-users, the Contractor shall select a final site or sites for more detailed analysis, including but not limited to:

- a) Provide cost information and process economics for the sites, including permitting.
- b) Provide details of the site's gas collection system. Estimate costs for operation of pretreatment and processing systems (analysis should account for fact that gas collection systems draw in significant amounts of air and the cleanup processes become less efficient and more costly, due to the additional nitrogen and oxygen that must be removed; because the composition of landfill gas can vary substantially with time, location of the draw from the landfill, and the effectiveness of the collection system, the cleanup process is both complex and costly in capital, labor and energy).
- c) Determine specifications required for LNG output (also see (e) below).
- d) Determine if a power generation facility may also have to be included in a project to power the LNG processing facility.
- e) Determine end users' interest in process products and conduct economic feasibility analysis for LNG facility.
- f) Provide cost estimate and design for LNG transfer lines, truck loading facilities and storage vessels, including pump modules and all necessary equipment and piping for product transfer and fire protection equipment.

Task 4: Final Report:

The Contractor will provide a final report to the CIWMB's Contract Manager at the conclusion of the project. This report will include recommendations for subsequent project implementation, including but not limited to:

- a) Recommendations regarding preparation of a package for competitive bid to select a contractor to complete a LNG production facility with the following process elements: engineering design; project management; permitting; construction; installation; gas quality verification; and maintenance.
- b) Recommendations regarding operation of a LNG generation facility, once built, and transport of fuel to local jurisdiction end-users, including:
 - Operation and maintenance of the LNG generation facility for a minimum of four years;
 - Coordination and development of filling program with mobile refueler supplier to ensure safe operation at the LNG generation facility and the appropriate local jurisdiction;
 - A process for coordination with local jurisdictions to develop a delivery program based on a city's LNG usage and hours of operation; and
 - Development of a preferred or model notification program for shutdowns, delays of LNG delivery, and LNG-related emergency incidents.

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VI. CONTRACT/TASK TIME FRAME

The following dates shall be adhered to unless extensions have been requested by the Contractor with justification and are approved by the Board's Contract Manager.

[4 weeks from contract execution]: Workplan (Task 1)

[3 months from contract execution]: Progress report to CIWMB Contract Manager upon completion of evaluation of landfill sites (Task 2)

[5 months from contract execution]: Progress report to CIWMB's Contract Manager upon completion of LNG technology plan evaluation and design (Task 3)

[7 months from contract execution]: Progress report to CIWMB's Contract Manager upon completion of site selection for construction of the LNG production facility (Task 4)

[9 months from contract execution]: Final report to the CIWMB's Contract Manager (Task 5)

CONTRACT ALLOCATION PROPOSAL 2006-2007 FISCAL YEAR

Division/Office: P&E/Deputy Director	Concept No.: 2006-D-6
Requestor/Primary Contact: Levenson/Walker	Fund (IWMA, Oil, RMDZ, etc.): IWMA
Estimated Contract Amount: \$200,000	
Contractor (Check One): <input type="checkbox"/> State Agency <input checked="" type="checkbox"/> Local Agency <input type="checkbox"/> Private	
Title: Landfill-Based Anaerobic Digestion Compost Pilot Project	

I. INTRODUCTION

There is a long and successful history of large-scale anaerobic digester operation in Europe to process urban organics but none in California. The goal of this interagency agreement is to assess the capabilities of a new landfill-based anaerobic digester technology to generate electricity, to achieve emissions less than those of current aerobic composting technology, and to be cost effective with California's tip fee structure. The demonstration project will determine the viability of this new technology as part of a solution to California's organic waste recycling capacity. This project would support the work of the Bioenergy Working Group, the Climate Action Team (beyond 50% strategy), and the Board's Technology Assessment Action Plan.

The demonstration project will be built on top of an existing lined landfill at Yolo County landfill. Under the project a lined cell will be constructed and loaded with clean source-separated organic material, water will be added and recirculated to adjust moisture content and optimize the digestion of the material and production of methane and carbon dioxide which will be collected for the purpose of generating electricity on site. After the digestion is complete the cell contents will be excavated, cured and used as compost. Although the project will be constructed at a landfill, this is not a waste disposal technology. Rather, it is an anaerobic digester that is designed for processing clean source-separated organic materials at a landfill site – converting them to electricity and compost. By designing an anaerobic digester on top of a lined landfill the underlying groundwater should be better protected and the project should require less capital cost, hence making it a more cost effective project by utilizing on site gas collection facility and other liquid and gas collection piping.

II. SPECIFIC GOALS AND HOW ACCOMPLISHMENT WILL BE MEASURED

The main goal of the project is to demonstrate the technical and economic feasibility of this landfill-based anaerobic digester. Towards this end, the project will quantify the economic and material inputs/outputs of the process (including emissions); quantify permitting, construction, and operating costs; analyze quality and economic value of decomposition products (gas and compost); and compare estimated construction and operating costs to the cost of other forms of organics processing systems with least amount of emission.

CONTRACT ALLOCATION PROPOSAL 2006-2007 FISCAL YEAR

III. JUSTIFICATION FOR PERSONAL SERVICES [GC 19130 b]

Civil Service staff does not possess the knowledge or experience to perform the designated tasks. This would entail a standard agreement with a local jurisdiction. The design and construction of the project will be completed by County staff and the on-site operations contractor respectively. Monitoring, testing, analysis and reporting will be done by County staff in cooperation with outside consultants that have expertise in this field and other Universities that have assisted the County in similar projects successfully in the past years.

IV. SCOPE OF WORK TO BE PERFORMED

Under the scope of work the contractor is to build an anaerobic digestion cell with the approximate dimensions of 100' x 200' x 20' high. The cell is to be filled with clean, ground, source separated green waste collected from the Yolo County and Sacramento County. After filling, the cell will be monitored, water will be added and re-circulated and the gas collected for generation of electricity.

All inputs and outputs will be monitored. At the end of the process, the cell contents will be aerated and completely excavated, cured and used as compost. From the collected data, the contractor will prepare a report which will include an economic analysis of the project and a comparison of the technology to other organic materials processing techniques used in the State.

V. TASKS IDENTIFIED

Under this agreement, the contractor would agree to construct and demonstrate an organic waste anaerobic digestion demonstration project. Before implementing the demonstration project the contractor shall obtain all necessary regulatory approvals for the project.

Task 1. Design and Construction

Prepare design and specification for constructing a landfill-based anaerobic digestion demonstration project. The construction of the anaerobic digester will occur on top of an inactive area of the landfill at the Yolo County Central Landfill. The cell below the area (WMU6 D-phase II) is lined with 60 mil HDPE liner and overlaid with an operating layer of shredded tires and 30 feet of waste. The anaerobic digester will be constructed on top of the existing one foot of intermediate soil cover. A liquid collection system will be installed prior the introduction of green waste. The gas recovery system and leachate recirculation system will be also installed during the filling process which is expected to take 4-6 months. After the cell is filled with source separated clean green waste, the cell will be capped and monitored.

CONTRACT ALLOCATION PROPOSAL 2006-2007 FISCAL YEAR

Task 2. Operation, Monitoring and Analysis

After the construction, the anaerobic digester cell will be sealed, and water will be added and re-circulated to the organic waste to speed up the anaerobic decomposition and methane production. Gases will be extracted and piped to an on-site landfill gas to energy facility for electricity production. The total amount of liquids added and gas collected will be measured using flow meters. The temperature and moisture of the pile will be monitored continuously. Liquid samples will be monitored for pH and other nutrients regularly for at least 6 to 9 months during the anaerobic digestion phase. Analysis of the leachate and gas samples will be done on site and some will be sent out to outside laboratories for testing.

Task 3. Compost Recovery and Testing

Once the anaerobic phase of the project has reached near completion the system will be aerated using air injection and removal system installed during the filling phase which was partially used for methane gas collection. Gases removed will be pumped to a biofilter to treat VOC's and methane gas prior to venting to the atmosphere. Gas temperature and cell temperature will be monitored to ensure composting temperature has reached. Air injection will be adjusted to ensure uniform distribution of air and aerobic decomposition in all areas of the cell. Once cell contents stabilize, the cell will be opened and the contents excavated, screened and cured to produce a marketable compost product. The excavated materials will be tested using the US Compost Council testing protocol (Seal of Testing Assurance) and compared to other compost products produced by composters in the State. The agronomic benefits and marketability of the compost will be assessed and the product value will be determined for use in horticultural and agricultural.

Task 4. Final Report

At the completion of the project, a report will be prepared and delivered to the CIWMB. The report will include a technical description of construction and monitoring results of the project. The contractor will also report on costs to build, operate and monitor the demonstration project. The report will discuss the technical and economic viability of this type of digestion process compared to other methods of organic waste management in practice throughout the State.

CONTRACT ALLOCATION PROPOSAL 2006-2007 FISCAL YEAR

VI. CONTRACT/TASK TIME FRAME

It is estimated that the permitting for this project will be done by March 2007.

Task 1. Design and Construction- Design for the project will begin shortly before permitting in January 2007 and construction will start as soon as weather allows in May 2007. Filling of the cell will take about 6 months. Cover and gas collection system installation will be complete by November 2007.

Task 2. Operation, Monitoring and Analysis- Anaerobic operation, monitoring and analysis of the cell will start in December 2007 and it is expected to take about 6 to 9 months (May-August 2008).

Task 3. Compost Recovery and Testing- Once the anaerobic phase of the project has reached near completion the cell will be operated aerobically for at least one month. The cell will be opened and the contents excavated, screened in September 2008. The excavated materials will be tested using the US Compost Council testing protocol in October 2008.

Task 4. Final Report- Draft final report will be prepared for CIWMB staff by December 2008. Once County receives comments the draft final report will be submitted to the CIWMB within two weeks.

CONTRACT ALLOCATION PROPOSAL 2006-2007 FISCAL YEAR

Division/Office: Permitting and Enforcement	Concept No.: 2006-D-7
Requestor/Primary Contact: Watson/Levenson	Fund (IWMA, Oil, RMDZ, etc.): IWMA
Estimated Contract Amount: \$20,000	
Contractor (Check One): <input checked="" type="checkbox"/> State Agency <input type="checkbox"/> Local Agency <input type="checkbox"/> Private	
Title: Prison Industries Authority – Food Waste To Liquid Fertilizer Pilot Project	

I. INTRODUCTION

The Board continues to assess different technologies as a means of providing more assistance to local jurisdiction efforts to divert more materials from being landfilled, per its mandate under AB939. The Board's 2005 Technology Assessment Action Plan includes pilot projects and other efforts for evaluating and helping develop emerging technologies that divert materials from landfills, help reduce greenhouse gas, and create energy or other usable products from solid waste. These activities also support the Board's participation in the Bioenergy Working Group, as well as the Climate Action Team (beyond 50% strategy).

This interagency agreement would allow for installation of a within-vessel food waste processing system to generate high value liquid fertilizer. It would provide for evaluation of the technical and economic feasibility of the pilot to help lay the groundwork for similar future projects. The proposed services will be provided by the Prison Industry Authority (PIA), which has the ability to test and run an automated, within-vessel processing unit to handle prison-generated food waste and generate high-value liquid fertilizer. The PIA has identified several sites that are ideally suited, many of which are rurally located, and has offered the Folsom site for a pilot installation (about 1 ton per day of clean food material) to evaluate low cost processing options. The PIA would evaluate the high temperature liquid compost technology by testing the effectiveness of an in-vessel food waste processing unit and would develop and analyze procedures for converting food waste into a usable high-value liquid fertilizer product. The PIA would fund purchase of the unit. This interagency agreement would provide additional funding for feedstock analysis; process modifications if needed; assessment of market potential for the pasteurized, by-products (solid components) generated from the unit; and estimates of costs for this and larger-sized facilities. CIWMB staff would provide technical assistance support for the project.

II. SPECIFIC GOALS AND HOW ACCOMPLISHMENT WILL BE MEASURED

The specific goals of this agreement will be to evaluate the technical and economic feasibility of converting on-site food waste to a viable liquid fertilizer product. The success of the project will be measured by the ability to take this information and apply it at other facilities to achieve similar results. The other measure of success will be if the fertilizer product is viable in all settings and does not create nuisances or produce vectors or pathogens as a result of the design or application.

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III. JUSTIFICATION FOR PERSONAL SERVICES [GC 19130 b]

Not applicable as this would entail an interagency agreement.

IV. SCOPE OF WORK TO BE PERFORMED

As California's lead agency for solid waste management, the CIWMB is responsible for ensuring the continued diversion of waste materials and providing for technological development in alignment with statutory mandates and the Governor's policies to further the protection of public health, safety, and the environment. This mission is accomplished through waste prevention, waste diversion, and safe waste processing and disposal. The CIWMB seeks to provide opportunities to support technology development as part of its effort to share statewide knowledge of viable alternatives to waste disposal.

This contract will provide the CIWMB with valuable information on technology to convert food wastes on-site to a liquid fertilizer. The contractor will demonstrate the feasibility of converting on-site food waste to a viable liquid fertilizer product. Specifically, the contractor will develop a full workplan that encompasses all steps necessary to provide the CIWMB with a final report on the feasibility of retrofitting existing equipment, purchase of new equipment and any other steps for the overall project of converting on site food waste to a viable liquid fertilizer project. The contractor will be responsible for any costs beyond the amount allocated and approved for expenditure within the contract per negotiation of the final contract. The contractor will supply all labor to implement the services specified in the contract except for those parts agreed upon between CIWMB staff and the Contractor.

V. TASKS IDENTIFIED

Task 1: Prepare for project implementation

Task 1.1: Develop full workplan to include:

Task 1.2 Foot print & Capacity

Task 1.3 Operational requirements: manpower, handling equipment, utilities, monitoring

Task 1.4: Conversion of existing equipment

Task 1.5: Acquire additional equipment

Task 1.6 Troubleshoot system design prior to start up

Task 1.7 Determine and analyze feedstock, characteristics, quantity, quality

Task 1.8 Prepare feedstock source plan for continuous supply

Task 1.9 Placement of liquid fertilizer product plan, develop plan for solids marketing, quantity of solids, quality of solids, additional processing required, where disposed/used

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Task 2: Implement Project, Monitor and Develop Report

Task 2.1: Implement start up

Task 2.2 Assess challenges, stoppages

Task 2.3 Progress Report

Task 2.4 Jointly develop final report to assess viability for larger facilities and feedstocks with CIWMB staff representative(s)

Final report should include:

- Project feasibility recommendation
- Summary of data collected explaining the feasibility of this project
- Original data collected throughout contract
- Costs associated with project including equipment conversion and new purchases

VI. CONTRACT/TASK TIME FRAME

Task Number/Description

Deliverable Due Date

Task 1: Prepare for project implementation

Task 1.1: Develop full workplan

November 2006

Task 1.2 Foot print & Capacity

January 2007

Task 1.3 Operational requirements: manpower, handling equipment, utilities, monitoring

January 2007

Task 1.4: Conversion of existing equipment

January 2007

Task 1.5: Acquire additional equipment

February 2007

Task 1.6 Troubleshoot system design prior to start up

March 2007

Task 1.7 Determine and analyze feedstock, characteristics, quantity, quality

March 2007

Task 1.8 Prepare feedstock source plan for continuous supply March 2007

Task 1.9 Placement of liquid fertilizer product plan, develop plan for solids marketing, quantity of solids, quality of solids, additional processing required, where disposed/used

April 2007

Task 2: Implement Project, Monitor and Develop Report

Task 2.1: Implement start up

Mid-April 2007

Task 2.2 Assess challenges, stoppages

Ongoing

Task 2.3 Progress Report on findings to date

January 2008

Task 2.4 Final report

December 2008

CONTRACT ALLOCATION PROPOSAL 2005-2006 FISCAL YEAR

Division/Office: Permitting and Enforcement	Concept No.: 2006-D-8
Requestor/Primary Contact: Richard Castle	Fund (IWMA, Oil, RMDZ, etc.): IWMA
Estimated Contract Amount: \$300,000	
Contractor (Check One): <input type="checkbox"/> State Agency <input type="checkbox"/> Local Agency <input checked="" type="checkbox"/> Private	
Title: Financial Assurance Mechanisms for Long-Term Corrective Action at Closed Solid Waste Landfills	

I. INTRODUCTION

In July 2006 the Board directed staff to conduct a study of the availability and applicability of financial assurance mechanisms that could be used to cover long-term known or reasonably foreseeable corrective actions at closed solid waste landfills. The study would assess the pros and cons of options such as a statewide requirement that all operators contribute to a pooled fund to provide for the longer-term care and/or corrective actions faced at closed facilities, and a statewide requirement that all operators purchase insurance coverage for any costs faced at the closed facility that are not already identified and otherwise insured to the State.

In order to provide a basis for subsequent regulatory or statutory changes, the study would define potential threats to public health and safety or the environment posed by the location and conditions of different landfills, as well as possible positive aspects of landfills' construction and containment techniques and materials, which could impact long-term threats to public health and safety or the environment. This would include what criteria to identify as risk receptors, a value for these receptors, and a method for determining the overall coverage level (i.e., financial assurance) to require of individual operators. Based on results of such a study, staff then would return to the Board with further recommendations regarding long-term corrective action financial assurance requirements.

II. SPECIFIC GOALS AND HOW ACCOMPLISHMENT WILL BE MEASURED

Goal 1: Develop a list of applicable financial demonstrations appropriate for long-term financial exposures at closed solid waste landfills. The performance measure for Goal 1 is a completed analysis of all currently identified financial demonstrations within Title 27, California Code of Regulations, Division 2, Subdivision 1, Chapter 6 as well as identification and analysis of other appropriate financial demonstrations not currently identified.

Goal 2: Develop a working model of a state-wide pooled fund to receive equitable contributions from all operating solid waste landfills within California to cover all long-term care and corrective actions at closed solid waste landfills. The performance measure for Goal 2 is a conceptual model of the pooled fund, the resources necessary to establish and manage the fund, the appropriate ongoing value of the fund, the expected annual earnings of the fund, the parameters for utilization of the fund, and a thorough evaluation of the effectiveness of such a pooled fund to adequately, and equitably, provide an ongoing resource for the long-term care and corrective actions of all closed solid waste landfills.

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Goal 3: Develop criteria for insurance coverage at closed solid waste landfills to be purchased by all operators that will provide financial assurance that all exposures not already identified and assured to the State will be insured. The performance measure for Goal 3 is a completed insurance requirement that will be available from the insurance market and which will provide an umbrella of financial coverage to all solid waste landfills within California.

Goal 4: Define potential threats to public health and safety and the environment that are posed by the location and condition of solid waste landfills within California. The performance measure for Goal 4 is a listing of threats with a severity rating for each that can be utilized to score every landfill within California on a scale of severity of exposure to public health and safety and the environment.

Goal 5: Define aspects of solid waste landfills construction techniques and materials and environmental control systems that can reduce the long-term impacts and threats to the public health and safety or the environment. The performance measure for Goal 5 is a listing of construction techniques and materials and environmental control systems with a performance rating for each that can be utilized to score every landfill within California on a scale of reduction of potential exposure to public health and safety and the environment.

III. JUSTIFICATION FOR PERSONAL SERVICES [GC 19130 b]

GC 19130 “(b) Personal services contracting also shall be permissible when any of the following conditions can be met:

...

(3) The services contracted are not available within civil service, cannot be performed satisfactorily by civil service employees, or are of such a highly specialized or technical nature that the necessary expert knowledge, experience, and ability are not available through the civil service system.”

IV. SCOPE OF WORK TO BE PERFORMED

The contractor will be required to review all currently available financial assurance demonstrations within California and propose additional financial demonstrations not currently identified that will provide equivalent or better assurance than the financial demonstrations currently allowed by the Board. The results of this analysis will be provided to the Board in a written and electronic report format identifying the pros and cons of each financial assurance demonstration, the associated fees to be encountered by the regulated public and the administrative expenses expected to be absorbed by the Board in review and acceptance of the financial demonstrations (Goals 1, 2, and 3).

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The contractor will also be required to evaluate the potential threats to public health and safety or the environment posed by the location and condition of landfills throughout the state, as well as possible positive aspects of landfills' construction and containment techniques and materials, which could impact long-term threats to public health and safety or the environment. This would include what criteria to identify as risk receptors, a value for these receptors, and a method for determining the overall coverage level (i.e., financial assurance) to require of individual operators (Goals 4 and 5). The results of this analysis will be provided to the Board in a written and electronic report format with a matrix to be applied to any landfill within California to determine the risk of exposure to the public health and safety and the environment potential from the individual landfill rated.

V. TASKS IDENTIFIED

To meet the requirements and to fulfill the terms of the contract, the contractor shall complete the following five tasks. These tasks outline a general approach for meeting the requirements; however, alternative approaches for some or all of the tasks may be proposed as part of the competitive bid process if they meet or exceed the requirements and this is adequately demonstrated in the proposed work plan. The Board, in agreement with the contractor, may modify the work plans based on new information gathered during the contract term.

Phase I: Evaluate applicable financial assurance demonstrations for long-term financial exposures and develop a working model for a state-wide pooled fund and criteria for insurance coverage for all exposures not already identified and assured.

Task 1: Review existing financial demonstrations identified in Title 27, California Code of Regulations, Division 2, Subdivision 1, Chapter 6 as well as identification, applicability and analysis of other appropriate financial demonstrations not currently identified in these regulations.

- Include analysis of appropriate application of current demonstrations for long-term (beyond 30-year) financial exposures.
- Compare and contrast financial demonstrations for safety, security and accessibility of funds in a timely manner.
- Develop appropriate alternative financial mechanisms with similar security attributes as current assurances.

Deliverable: Detailed report of demonstrations in both hard and electronic copies using a computer software format acceptable to Board staff.

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Task 2: Develop a working model for a state-wide pooled fund for long-term postclosure care and corrective action at closed solid waste landfills.

- Review existing California pooled funds as current models (e.g. underground tank cleanup fund).
- Review pooled funds from other states and their applicability to long-term postclosure care.
- Compare and contrast existing institutional and financial market pooled funds identifying positive aspects and potential shortfalls.
- Identify procedures to ensure that the fund is paid into and accessible by all operators equitably.
- Identify expected costs to operators and the Board to establish and maintain the fund.
- Identify anticipated earnings potential of the fund and its liquidity and viability to financially assure long-term postclosure maintenance and corrective actions.
- Identify alternative working models for use by the Board.

Deliverable: Detailed report and alternative working models in both hard and electronic copies using a computer software format acceptable to Board staff.

Task 3: Develop a product to be purchased by all landfill operators to provide an umbrella insurance policy capable of assuring all long-term postclosure maintenance costs not already identified and assured to the Board.

- Consult with insurance industry representatives.
- Provide draft certification language to Board staff for review.
- Identify pricing process for product.
- Identify factors considered in determining pricing of product.
- Estimate average anticipated premium cost to each operator.

Deliverable: Draft and final Insurance Certificate, acceptable to insurance industry and Board staff, in both hard and electronic format using computer software acceptable to Board staff. The final must also include the anticipating pricing structure of the final product.

Phase II: Identify potential threats posed by the location and condition of solid waste landfills and positive aspects of construction techniques and materials and environmental control systems that may reduce the long-term impacts and threats to public health and safety or the environment.

CONTRACT ALLOCATION PROPOSAL 2005-2006 FISCAL YEAR

Task 4: Define receptors and develop severity rating matrix to evaluate and score solid waste landfills for potential risk.

- Work with Board, Local Enforcement Agency and State and Regional Water Quality Control Board staff in determination of receptors to identify.
- Prepare evaluation of severity of identified triggers of concern (including, but not limited to, depth to ground water, location of major and minor earthquake fault lines, distance to residents and businesses, distance to natural resources, location to streams and waterways, local annual rainfall, potential for flooding, etc.)

Deliverable: Detailed report and risk matrix in both hard and electronic copies using a computer software format acceptable to Board staff.

Task 5: Define aspects of solid waste landfills construction techniques and materials and environmental control systems that can reduce the long-term impacts and threats to the public health and safety or the environment.

- Work with Board, Local Enforcement Agency and State and Regional Water Quality Control Board staff in determination of receptors to identify.
- Prepare evaluation of long-term protection provided by identified construction techniques and materials and environmental control systems (including, but not limited to, leachate collection system, gas collection system, liner, cover, monitoring well placement and distance, etc.)

Deliverable: Detailed report and risk matrix in both hard and electronic copies using a computer software format acceptable to Board staff.

VI. CONTRACT/TASK TIME FRAME

Services need to begin by January 2007 to ensure that the study is completed and action by the Board can continue in a timely manner. If this date is not met, there will be continued delays in the Board's process to find the best course of action to obtain assurances from landfill operators of the ongoing, long-term protection to the public health and safety and the environment posed by closed solid waste landfills. The contract is anticipated to take approximately 9-months to complete and receive the final reports of each of the aspects identified.